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The following paper was presented for publication:

"Description of six new species of Fresh Water Shells." By Isaac Lea.

June 22d.

Dr. Ruschenberger, Vice-President, in the Chair.

Twenty-three members present.

The death of Dr. Charles D. Meigs was announced.

The following paper was presented for publication:

"Notice of certain obscurely known species of American Birds, based on specimens in the museum of the Smithsonian Institution." By Robt. Ridgway.

June 29th.

The President, Dr. Hays, in the Chair.

Twenty-five members present.

The report of the Biological and Microscopical Section was presented and referred to the Publication Committee.

On permission being granted, Mr. Warner spoke upon the mathematical representation of organic forms. Such limitations, he said, might serve to narrow the field of research into the physical causes of organic forms, and perhaps furnish the suggestion of a rational theory of these causes. If no other advantage were derivable from imitations of this kind, they might, he thought, be useful for description and classification.

He exhibited a representation of the longitudinal section of an egg by a curve which he called the hyper-ellipse, and of the section of an embryo by another curve which he termed a deformed lemniscate. Of the egg curve, he said that it very closely resembled an ideal section of an egg taken from a standard modern work. Of the curve representing the embryo he said that it not improbably marked the boundary of matter lying within it, in a different state of temperature, density, or tension from the matter lying without. These representations were verified by the members present. The speaker expressed the intention of making these representations the subject of a future paper, in which he would give drawings and formulæ.

The following gentlemen were elected members:

Dr. N. R. Bradner, U. S. N.; Charles B. Nancrede, M. D., and Harry Emlen.

Alexander Carte, of Dublin, was elected a correspondent.

On favorable report of the Committees, the following papers were ordered to be published:

Descriptions of six new species of FRESH WATER SHELLS.

BY ISAAC LEA.

Unio Macnielii.—Testa sulcata, oblonga, valde inæquilaterali, antice subrotunda, postice obtuse biangulata; valvulis crassiusculis, antice crassioribus; natibus prominulis; epidermide fusca vel luteola, postice viridi radiata; den-

tibus cardinalibus parviusculis, compressis crenulatisque; lateralibus sublongis lamellatisque; margarita argentea et valde iridescente.
Hab.—Rio Gigillillo, Corcuera, Nicaragua, Cen. Am., Mr. J. A. McNiel.

GONIOBASIS BACULOIDES.—Testa lævi, cylindracea, subtenui, luteola, quadrivittata; spira valde elevata; suturis irregulariter impressis; anfractibus planulatis; apertura parva, rhomboidea, intus vittata et cæruleo-alba; labro acuto, vix sinuoso; columella vix incrassata, contorta.
Hab.—Coosa River, Alab., Dr. Schowalter.

GONIOBASIS LAWRENCII.—Testa lævi, subcylindracea, subcrassa, tenebroso-cornea, dilute vittata vel evittata; spira elevata; suturis impressis; anfractibus planulatis; apertura parviuscula, rhomboidea, intus albida; labro acuto, sigmoideo; columella incrassata et cortorta.
Hab.—Washita River, near Hot Springs, Arkansas, Dr. Lawrence.

SCHIZOSTOMA LEWISII.—Testa crebrissima striata, subcylindracea, subtenui, luteo-fusca, imperforata; spira conica, plicata; suturis valde impressis; anfractibus instar septenis, ultimo grandi; fissura obliqua brevique; apertura grandi, rhomboidea, intus vittata; labro crenulato, sinuoso; columella alba, incrassata et contorta.
Hab.—Coosa River, Alab., Dr. Schowalter.

PHYSA CARLTONII.—Testa lævi, obtuse fusiformi, inflata, valde polita, tenui, subpurpurea; spira exserta, acuminata; suturis impressis; anfractibus senis, ultimo pergrandi; apertura ovata, grandi; labro expanso, intus marginato; columella impressa et contorta.
Hab.—Mount Diablo, California, W. G. W. Harford.

PHYSA WOLFIANA.—Testa subrotunda, valde inflata, polita, tenui, tenebroso-cornea; spira valde obtusa; suturis impressis; anfractibus quaternis, ultimo pergrandi; apertura ovata, grandi; labro expanso; columella medio parum impressa et parum contorta.
Hab.—Hot Springs, Colorado Ter., Prof. J. W. Powell.

Notices of certain obscurely known species of American BIRDS.

(Based on specimens in the Museum of the Smithsonian Institution).

BY ROBERT RIDGWAY.

INTRODUCTORY REMARKS.

The following notes comprise the result of some examinations in the extensive series of North American birds in the Museum of the Smithsonian Institution, to which I was kindly allowed access by Professor Henry. They were made especially in connection with the determination of collections gathered by myself as Zoologist to the U. S. Geological Survey of the 40th Parallel, nnder Mr. Clarence King, principally in California, Nevada and Utah.

Crossing so wide an extent of country as that indicated, it so happened that the operations of the party allowed of extensive examination of the region along the lines of junction of the three great "Provinces" of Professor Baird's paper on the migration and distribution of North American birds, and I had frequent occasion to confirm, and in some cases to extend his remarks relative to the affinities of the species of the different regions, and especially to their hybridization, and to learn to what extent this may take place, and therein tend to perplex the naturalist in his endeavors to determine the exact character of his collections. When to this is added the change which confessedly the same species undergoes under different climates, elevation, and geographical distribution, it is no wonder that many cases exist in which even our best critics may reasonably confess themselves at fault as to the precise name of the specimen, especially in view of the fact that many of them